Chem-Eng. Wilson

INDEX TO VOLUME XX

GENERAL ALPHABETICAL INDEX

*Entries from the Synopsis of Periodical Literature are indicated by S; from the Analysis of Current Electrochemical, Chemical and Metallurgical Patents by P; Papers read at society meetings but not printed in full are indicated by N. Illustrated articles are indicated by **

A

Acetic acid, From wood pulp waste..... 542
——Manufacture. Dreyfus. (P.)..... 248
Acetone, From wood. Bassett..... 190
——From wood pulp waste..... 542
Acid eggs, Cast iron, Bursting of. (S.)... 433

ACID:

——Mixed, Action on cast iron. (S.).... 433
——Mixed, Plant at Nitro..... *406
——Surplus, War Department..... 319
Air conditioning 405
Alaska, Ammonia leaching at Kennecott.. 328
Albumen glues 601
Alcohol, Methyl, From wood pulp waste.. 542
Alien Property Custodian, Report on chemical industries 264
——Report on metal industry 313

ALLOYS:

——Acid-proof. Rossi. (P.)..... 597
——Aluminium-Tin, Equilibrium diagram. 423
——Chemically reactive. (S.) 594
——Chromon. 437
——Colloid-chemical nature. Alexander. (N.) 212
——Copper-aluminium, Equilibrium diagram 424
——Copper, Determination of phosphorus in 58
——Magnesium-lead. (S.) 594
——Norwegian bronze 179
——Silicon, Hydrogen from *289
——Steel, Flakes in *216
—— For helmets and armor, Coyle.... 618
——Zinc-copper-aluminium, Guillet and Bernard. (S) 645
——Zinc-iron 530
Almaden, Spain, Mercury production at, Sterner-Rainer *32

ALUMINA:

——Beta, Saunders. (P.)..... 87
——Crystalline, Tone. (P.)..... 87
——From impure bauxite, Saunders. (P.) 87
——Production, Larson. (P.)..... 487
——Purification, Hornsey. (P.)..... 487
——Purification, Saunders. (P.)..... 87

ALUMINIUM:

——Bronze, Die casting of, Rix. (S.).. 135
——Bronze industry, Corse..... 162
——Bronze, Properties of 163
——Diseases of *280
Alunite, Potassium sulphate from, Chappell. (P.) 249
Ambrine treatment for burns 288
American Bureau of Welding, Election of officers 456
American Ceramic Society, Pittsburgh meeting 180

AMERICAN CHEMICAL SOCIETY:

——Buffalo meeting, Report..... *390

AMERICAN ELECTROCHEMICAL SOCIETY:

——New York meeting, Program..... 273
—— Report *379
——Fall meeting, Announcement 616
——Pittsburgh Section 31
American Electroplaters' Society, Research fund 501

AMERICAN INSTITUTE OF CHEMICAL ENGINEERS:

——Boston meeting, Announcement..... 334
—— Program 504
——Chicago meeting, Program..... 37
—— Report of..... *115

AMERICAN INSTITUTE OF MINING ENGINEERS:

——Chicago meeting, Announcement..... 505
——New York meeting, Program 101
—— Report *208
——Pyrometry symposium, Program.... 455
American Paper and Pulp Association:
——New York meeting *184
American Metal Co., German-owned shares sold 430
American-Scandinavian Foundation 505
American Smelting and Refining Co., Report 615
American Welding Society 265
——1st meeting, New York..... 400

AMMONIA:

——From cyanides and ferrocyanides. (P.) 431
——From cyanamide. Muscle Shoals.... 14
——Leaching of copper ores. Eddy..... 328
——Nitric acid from, Landis. (P.).... 431
——Oxidation of, Landis..... 470
——Oxidation of, Parsons. (N.)..... 502
Ammonium nitrate, Controlling crystallization, Boiling 401
——Perryville plant *320
——Phases of 321
——Production at Muscle Shoals..... *17
Ammonium perchlorate, Aanensen. (P.) 597
Ammonium sulphate, Production, Larson. (P.) 487

ANALYSIS:

——Aluminium in plain steel 588
——Chromium in steel 589
——Copper, Electrolytic, without rotating cathode 452
——Ferromanganese 53
——Jones reductor for steel 523
——Nickel in steel, Modified cyanide method, Miller. 613
——Phosphorus in copper alloys..... 58
——Potash in cement by perchloric acid method 452
——Red lead, Edwards 35, 260
——Sulphite liquor, Baker. (N.)..... 185
——Sulphur dioxide in gases. (S)..... 541
——Uranium in chrome tungsten steel... 524
——Uranium in plain steel..... 523
——Vanadium in steel 589
——Zirconium in steel 588
Aniline hydrochloride, Ahlum. (P) ... 648
Anti-dumping law advocated..... 116
Anti-freezing mixtures containing calcium chloride, Rudnick. (N.)..... 394
Apparatus, Chemical, Buflokast *395
Arc welder, Portable 436
Argentina, Linseed production 220
Armor, Alloy Steels for, Coyle 618
Arndt gas balance *291
Asbestos, Platinized, Frabetti. (P.)..... 487
Ash, Coal, Fusibility of, Selvig et al.... 274
Ashpit door, Air tight..... 598
Asphaltic sandstone, Extraction of kerogens from 31
Australia, Dye importation prohibited.... 420
Auto-recorder, CO_2 ..... *243

B

Ball mills, Fine crushing in, Davis. (N.) 210
Barium industry, Future of, Rollin..... 163
Barium products, Uses of..... 164
Bartlesville Zinc Co., Sintering zinc residues, Stock *525
Bauxite, Purification of, Saunders. (P.) 87
Bearings, Detecting overheating of..... 577
Beer Sondheimer & Co., Organization.... 316
Beet-sugar, Production in Utah and Idaho 560
Belting for power transmission, Wilson. (N.) 117
Belting, Leather, Specifications. (S.).... 543
Benzol, French production 57

BIBLIOGRAPHIES:

——Chemical literature:
—— Biochemistry 580
—— Mining and metallurgy 580
—— Organic 578
——Cottrell, F. G., Articles and patents.. 114
——Metallic coatings for rust-proofing iron and steel 591
——Milling calculations, Lewis..... 233
Bi-meter CO_2 recorder *243
Bituminous roofing materials, Wilson. 425, 484
Black Hills Mining Men's Association.... 207
Black sand deposits 79
Black sands, Platinum in..... 101
Blistering in sheet steel enamel. (N.)..... 182
Blood albumen glues 601
Boiler plants, Fuel economy in, Kershaw. 176, *241, *291

BOOK REVIEWS:

——Allen, Mill and Cyanide Handbook... 361
——Auld, Gas and Flame in Modern Warfare. 439
——Ellis, Hydrogenation of Oils..... 601
——Ferry, Handbook of Physical Measurements 438
——Gill, Handbook of Oil Analysis..... 90
——Hale, Applications of Electrolysis in Chemical Industry 438
——Johnson, Principles, Operation and Products of the Blast Furnace.... 438
——Laucks, Commercial Oils..... 602
——Lunge, Technical Chemists' Handbook 90
——Manlove and Vickers, Scrap Metals. 194
——Megraw, Flotation Process 440
——Morgan, Organic Compounds of Arsenic and Antimony..... 90
——Shuey, Bibliography of Foreign Trade Publications 136
——Smith, Electro-Analysis 601
——Smith, The Zinc Industry..... 136

BOOK REVIEWS—*Continued:*

——Steinmetz, General Lectures in Electrical Engineering 439
——Villavecchia, Treatise on Applied Analytical Chemistry 439
——Wile, Explaining the Britishers..... 438
Boxes, Metal strapping on..... 483
Brass, Cartridge, Comparison of grain-size and Brinell hardness. (N.)..... 212
——Corrosion in sea water, Bruhl..... 239
——Influence of certain variables on anneal of cold-worked alpha brass, Phillips and Gerner..... *622
——Pyrometer for 436
Brick, Manufacture at Kingsport..... 568
Briquetting brittle metals, Vogel. (P)... 647
British Columbia, Electric pig iron for... 206
——Electric smelting, Commercial feasibility 630
——Mineral production, 1918..... 148
British import restrictions.....189, 288, 600

BRONZE:

——Alloy, Norwegian 179
——Aluminium, Die casting, Rix. (S.). 135
——Aluminium, Properties of..... 163
——Manganese, Manufacture. (N.).... 212
——Phosphor, Properties of..... 163
——Pyrometer for 436
Brooklyn, Polytechnic Institute dinner.... 505
Bucher process, Davis. (N.)..... 394
Buffalo, American Chemical Society meeting *390
Buffalo Foundry & Machine Co..... *395
——Vacuum drum drier..... *642
Buflokast apparatus, Making..... *395
Bureau of Mines, Mesothorium research.. 168
——New laboratories in Pittsburgh..... 617
Bureau of Standards, Electroplating work. 501
——Standard samples, Distribution of.... 276
Burns, Treatment of 288
By-products, Principles of, Steinmetz. (N.) 184

C

Cable, Hoisting, Failure of, Robertson. (N.) 263
Calcium carbide, Preparing charge for, Becket. (P.) 431
Calculations, Milling, Lewis..... 224
California, Chromite deposits in..... 79
——Manganese and chromium in..... 319
——Mineral production, 1918..... 149
Calignate, Acetone and methyl alcohol from. (S.) 542
Calumet & Arizona Mining Co., Report.. 615
Cambridge bi-meter CO_2 recorder..... *243
Canadian graphite industry 81
Canadian Mining Institute:
——21st Meeting, Announcement 136
—— Report 262
Carbazol, Purification of, Weiss. (P.).. 596
Carbon Dioxide, Novel use..... 185
Carbon dioxide recorders, see Recorders, carbon dioxide.
Case-hardening, Shirmer, Richards. (N.). 213
Casting tools, Davidson process, Johnson. (N.) 213
Castings, Chemical, Pouring..... *396
Castings, Die, Pack. (N.)..... 212
Caustic Pots, Furnace settings, Nickle... *65
——Correction 261
Caustic Soda, French production..... 58
Celluloid-glass lenses, Rosenthal. (N.).. 504
Celluloid, Substitute, Zeisberg. (P.)... 296
Cement, Blast furnace slag-lime-gypsum.. 25
—— Resistance to sulphate corrosion... 28
—— Tests of 25
——Manufacture at Kingsport..... 568
Census of chemical imports 562
——Comment by Bernhard C. Hesse..... 559
Centrifugal agitator, Jacoby..... 598

CHARTS:

——Showing use of exhaust steam..... 18
——Alignment:
—— Indentation of steel balls under pressure 192
—— Power data for electrolytic zinc, Supplement to Feb. 15.
Chemical Alliance, Export statistics..... 295
——New York meeting 100
Chemical elements, Melting points of..... 351
Chemical Engineer, Modern training of, McKee. (N.)..... 503
Chemical Exposition plans 561
Chemical Foundation, Organization of.... 265

CHEMICAL INDUSTRY:

——At Kingsport, Tenn.....*565, *639
——Engineering research in, Field..... 84
——Foreign competition in..... 118

CHEMICAL INDUSTRY, *Continued*:
——Foreign trade, Aids to..... 189
——German methods. Choate. (N.).... 392
——In France during war. Maoussa.... 56
—— (S.) 542
——Intelligent location of..... 311
——Made permanent. Thompson 118
——Organic, Future of. Hibbert..... 335
——Organization of 123
——Present conditions in. Toch. (N.).. 116
——New Jersey. Recent deevlopments. (N.) 39
——Reconstruction aspects. Gudeman. (N.) 116
——Report of Alien Property Custodian. 264
——Tariff Commission and. Culbertson. (N.) 392
Chemical literature, Art of searching. Hibbert 578
Chemical market. 44, 92, 139, 196, 251, 299, 363, 443, 490, 546, 603, 650.
Chemical specifications. Cohoe..... 539
Chemical warfare, Effectiveness. Hendrick 152
Chemical Warfare Service, Pershing commends 601
Chemical war secrets. Gudeman. (N.). 117
Chemists' Club Scholarships 620
Chicago, Amer. Inst. of Chem. Eng. meeting *115
Chile, Instituto Cientifico Industrial..... 205
Chloridizing complex ores..... 207
Chlorine, French production.....57, 542
Chlorine in sanitation 414
Chromite, Concentration of..... 80
Chromium, Canadian practice. (N.)..... 263
Chromon, Pyrometer protection tubes... 437
Civil Service examinations: 318, 399, 589, 638
Claude helium plant at Fort Worth..... *110
Clays, American. Maynard. (N.)..... 185

COAL:
——Ash, Fusibility of. Selvig et al.... 274
—— Pennsylvania. Selvig and Fieldner 629
—— Improved furnace for fusion point. Lovejoy 538
——Clinchfield, Analysis of..... 567
——Distillation at low temperatures.... 78
——Lubricating oils from..... 79
——Powdered. For blast furnaces. Wotherspoon. (N.) 263
——Powdered, Nodulizing flotation concentrates with. Draper 621
Coal tar products, Tariff amendments..... 70
Colloidal silver chloride. Wood..... 260
Colloid-chemical viewpoint of metals. Alexander. (N.)..... 212
Colloids in Flotation, Reply to criticism... 52
Colorado Fuel & Iron Co., Americanization work *529
Combustion, Surface, Roasting by. McCourt. (P.) 297
Compensation laws, Need of revision..... 416
Concentrates, Flotation, Roasting. Fulton. (P.) 86
Concentrating system. Gahl. (P.)..... 432

CONCRETE:
——As chemical engineering material. Toch 222
——Defects of 222
——Methods for protection of..... 223
——Tanks, Reinforced. Frerichs..... 234
——Waterproofing 223
——Work at large acid plant..... 408
Condenser tubes, Corrosion of. (S.).... 594
Coniagas Mines, Ltd., Report..... 149
Consolidated Arizona Smelting Co., Report 616
Construction and Operation 47, 95, 142, 199, 255, 303, 366, 446, 495, 550, 607, 654.

COPPER:
——Alloys, Determination of phosphorus in 58
——Analysis, Electrolytic, without rotating cathode 452
——Coating steel with. Silverman. (N.) 211
——Companies, Employees to meet Secretary of Labor..... 136
——Cupro-phosphorus. Jeffs. (P.)..... 249
——Electrolytic refining. Laboratory plant. Hayward *240
——Flotation concentrates, Nodulizing. Draper 621
——Flotation plant at Ohio Copper Mill. 6
——Iron for precipitating. Johnson. (P.) 596
——Leaching oxidized ores 559
——Ores, Ammonia leaching of. Eddy.. 328
——Plating, Automatic. Richards. (N.) 211
——Production and price..... 455
——Recovery from sulphate solution. (P.) 432
——Russian smelter equipment. Carlyle. (N.) 263
——Volatilization of cuprous chloride on melting. (N.) 211
Cores for chemical castings..... *306
Corrosion. (See also Metal protection)
——Brass in sea water. Bruhl..... 239
——Condenser tubes. (S.)..... 594
——Nature of 458
—— Bibliography 591
Cottrell, F. G., Bibliography of articles and patents 114
Cottrell precipitator, At Kingsport..... 569
——Effect of dielectric deposits. (S.)... 89
——History of. Chandler..... 103
——In alkali pulp industry. (N.)..... 184
——In metallurgical plants. Thum..... *59
——Portable. Lamb. (N.)..... 386
Crane, Locomotive, Specifications. (S.).. 433
Cripples, Use of in industry. Munroe. (N.) 210
Crystal crushing, Example of.....72, 309
Crystals, Growth of. (S.)..... 595
Crystallization control. Bolling..... 401
Cuprodescloizite, Vanadium, lead and copper from. Conley..... 465
Cupro-phosphorus. Jeffs. (P.)..... 249
Cuprous chloride, Volatility. (N.)..... 211
Current Market Reports 42, 91, 137, 194, 250, 298, 362, 441, 489, 545, 602, 649.
Cyanamide, French production..... 57
Cyanamide Process at Muscle Shoals....9, 13
Cyanide plants, Calculating extraction... 225
Cyanides, Alkali, Ammonia from. (P.).. 431
—— Separation from hydroxide. Metzger. (P.) 431

D

Davidson tool-casting process. Johnson. (N.) 213
Decomposition of metals. Krynitzky.*277 *421
—— Correction 501
Deformation, Effect on mechanical properties of metals. Jeffries. (N.)..... 211
Denitrating plant at Nitro. Hollister..... *406
Depolarizers, Manganese dioxide. (P.)... 432
Die casting of aluminium bronze. Rix. (S.) 135
Die castings, Pack. (N.)..... 212
Dielectric deposits, Effect on Cottrell process. (S.) 89
Disabled men, Opportunities for..... 319
Distillation of coal at low temperatures... 78
Drier, Vacuum drum..... *642
Dye plant, Use of exhaust steam in..... 18
Dyes, French production..... 58
——Sulphur, Manufacture at Kingsport.. 639
——Tariff, Proposed amendments..... 70

E

Econometer, Arndt..... *291
Ecuador, Salt monopoly in..... 188
Edgewood Arsenal, Illustrated souvenir.. 469
Edgewood Arsenal, Walker. (N.)..... 386
——New commanding officer 636

EDITORIALS:
——Abolish duty-free imports of chemicals. 201
——Alignment of the steel industry..... 451
——An appraisal of the American potash industry 306
——The blight of blatherskite rule..... 257
——Bolsheviks and research 450
——Capacities well aligned in the iron industry 51
——The Chemical Foundation and confiscated German patents 554
——Chemical industry and the Victory Loan 370
——Chemistry, metallurgy, and the high cost of living 371
——Cinematic micrography 499
——Commodity values and construction work 307
——Deflating prices mobilizing industry. 259
——Dislocation of the copper industry.. 145
——The duration of prosperity..... 611
——An engineering opportunity—the by-product coke oven..... 2
——Faith in our friends and Allies across the Atlantic 50
——Favorable prospect for water-power legislation 202
——The first great step 554
——German chemical patents take on new aspects 258
——The gold producer and political economist 1
——Government control of markets..... 499
——Hard times for inventors..... 202
——Has heat treatment been demonstrated? 449
——Iron and steel in last year of war... 5
——Iron and steel production in 1917.... 203
——The iron map of Europe..... 90
——Metallurgy and civilization..... 258
——The metallurgy of copper in 1918... 4
——Minerals Separation wins doubtful victory 609
——National integrity, personal responsibility and the Victory Loan..... 449
——A new view of gas warfare..... 145
——Nitro-aromatics vs. nitroglycerine.... 306
——An opportunity for co-operative research 498
——The outlook of the optimist..... 49
——Pan American engineering literature. 1
——The passing of a friend..... 369
——A penalty on Western residence 553
——The philosophy of buying at present high prices 370
——Post-war meetings of scientific societies 201
——Progress in zinc smelting awaits impulse from metallurgists..... 202
——Promise of progress in rubber research 610
——Proposed improvements in American patent procedure 146
——Railroads and industrial research... 370
——Readjustment and resumption..... 555
——Research forbidden to railway companies 306
——A resolution of forces..... 371
——Restoring the dollar's value..... 147
——The rude awakening 497
——Scholarships in Sweden 498
——Scrapping war chemicals 97
——Scrutable in the penultimate..... 50
——Speaking of propaganda..... 257
——Sulphur patents are decreed invalid.. 259
——Teach engineering students how to study—first 98
——Validation of informal contracts.... 201
——Wanted: A guardian for the United States 369
——Warning! Beware the gas-mask!.... 305
EDITORIALS, *Continued*:
——The way to prosperity 450
——What of industrial opportunities in France? 97

EDUCATION:
——Americanization work by Colorado Fuel & Iron Co..... 529
——Business training for engineers 564
——Chemical Engineering. McKee. (N.) 503
——Industry, democracy and. Corliss. (N.) 208
——Mining schools in Nevada 148
——Vocational, In paper industry..... 185
Electrical Precipitators. E. E. Thum..... *59
Electric power production by states 617
Electrochemistry in its human relations. Tone 413
Electro-deposition plant, Laboratory. Hayward *240
Electrodes, For Cottrell precipitator..... 62
Electrons, Arrangement in atoms and molecules. Langmuir. (N.)..... 393
Electrostatic precipitation. Braley. (N.) 384
Elements, Chemical, Melting points of.... 351
Ellison gage, Zero point. Bacharach..... *246
Enameled steel, Blistering of. (N.)..... 181
Enamels, Simple chemical tests for. (N.). 181
Engineer as citizen, Symposium, Program 270
—— Report 377
Engineering Council, National Service Committee 114
Engineering research, Field..... 84
Engineering, "Wild." Wesson..... 512
Engineers, Business training for 564
England, Industrial research in..... 399
——Tungsten in. (S.)..... 594
Europe, War-time trip to. Parmelee.... *124
Evaporation of small spheres. Langmuir. (S.) 135
Exhaust steam at high back pressures. Field 18
Explosives, Nitro-aromatics in..... 311

EXPORT STATISTICS:
——Digest, Chemical Alliance..... 295
——Caustic soda, Dec., 1918..... 219
—— Jan., 1919 334
—— Feb., 1919 492
—— Mar., 1919 593
—— April, 1919 617
——Copper, Jan., 1919 334
—— Feb., 1919 492
—— Mar., 1919 593
—— April, 1919 617
——Glycerine, Dec., 1918..... 219
—— 1918 288
—— Jan., 1919 334
—— Feb., 1919 492
—— Mar., 1919 593
——Gold and silver, 1918..... 136
——Lead pigs, bars, etc., Dec., 1918..... 295
—— Jan., 1919 400
—— Feb., 1919 492
—— Mar., 1919 644
——Platinum (Canada), Dec., 1918..... 295
——Soda ash., Dec., 1918..... 219
—— Jan., 1919 334
—— Feb., 1919 492
—— Mar., 1919 593
—— April, 1919 617
——Tin plate, terne plate and taggers tin, Dec., 1918 219
—— Jan., 1919 400
—— Mar., 1919 593
——Tungsten and ferrotungsten, Dec., 1918 295
—— Jan., 1919 400
—— Mar., 1919 644
——Zinc, Dec., 1918 295
—— Jan., 1919 400
—— Feb., 1919 492
—— Mar., 1919 593
—— Mar., 1919 644
Extraction, Computation of 224

F

Ferro-alloys, At Heroult 613
——Production costs 636

FERROMANGANESE:
——Adding in ladle.....52, 53, 501, 612
——Analysis of 53
——At Great Falls, Mont..... 7
——Blast-furnace production. Royster. (N.) 215
——Eliminating phosphorus and sulphur. Lonergan 245
Ferromolybdenum. Westling. (P.) 249
Ferrophosphorus. Webster (P.)..... 249
Ferrosilicon. Johnson. (P.)..... 249
—— Furness. (P.) 249
Ferrotungsten in England. (S.)..... 595
Filterpress, Calculating capacity of..... 230
Firebrick, Improved furnace for fusion point. Lovejoy 538
Flakes in alloy steel *216
Flakes in steel. Styri.....*342, 478
——Correction *453
——Criticism. Feild 556
—— Reply. Styri 557

FLOTATION:
——Bradford preferential. Dean 372
——Colloids in, Reply to criticism..... 52
——Concentrates, Nodulizing in rotary kiln. Draper 621
——Concentrates, Roasting. Fulton. (P.) 86
——Effectiveness of 573
——Experiments on hardwood tar oils. Hawley and Ralston 586
——For the practical mill man. Moses.. 571
——Galena, From mixed sulphide ores. Read. (P.) 544
——Hand device for experiments. Coghill *537

FLOTATION—*Continued:*
——Importance of pure water..... 574
——Lead ores. Allen 169
——Oils from crude tar..... 341
——Plant at Ohio Copper Mill..... 6
——Preferential. Edser and Tucker. (P.) 597
——Recleaning concentrates 576
——Recoveries 571
——Recovering pulp from waste liquor by. (N.) 184
——Slime removal 572
——Sulphidizing 559
Foreign trade, Aids to..... 189
France, Chemical industry during war. Maoussa. .....56 (S.) 542
Frasch sulphur patents. Court decision. Mock and Blum 637
Fuel economy in boiler house. Kershaw. 176, *241, *291

FURNACE, BLAST:
——By-products. Gayley. (P.)..... 432
——Cement from slag. Bereslavsky..... 25
——Ferromanganese in. Royster. (N.). 215
——Gases. Dry cleaning. Barrett..... *359
——Potash from. Criticism..... 308
—— Reply 373
——Potash from gases. (P.)..... 432

FURNACE, ELECTRIC:
——General:
—— Problems. Yardley 212
—— Large vs. small..... 374
—— Temperature uniformity in. Ferguson 283
—— Transformers for *600
——Various Designs:
—— Northrup induction. Theory. (N.) 381
—— Resistance. Granular carbon. For fusion point of coal ash. Lovejoy 538
—— Vom Baur *488
——Products:
—— Calcium Carbide at Muscle Shoals. 11
—— Cyanamide at Muscle Shoals..... 13
—— Ferro-alloys at Heroult..... 613
—— Ferromanganese 7
—— Ferromanganese. Eliminating phosphorus and sulphur. Lonergan.. 245
—— Ferrosilicon. Furness. (P.) 249
—— Molybdenum. Escard. (S) 645
—— Pig and sponge iron at Heroult... 613
—— Pig iron, British Columbia....206, 630
—— Pig iron. Turnbull 178
—— Silicomanganese. Klugh. (N.).... 388
—— Steel. Armor. Nickel-manganese.. 618
—— Power costs 74

FURNACE, OPEN HEARTH:
——Manganese alloys used in. Hoyt. (N.) 215
——Refractories. Basic. (N.)..... 213
——Water cooled. Coffin. (N.)..... 213

FURNACE, MISCELLANEOUS:
——Caustic *65
——Cermak-Spirek. Mercury..... 34
——Bustamente. Mercury..... 33
——Gas-fired caustic pot furnace..... 68
——Preparing calcium carbide charge. (P.) 431
Fusibility of coal ash. Selvig, Ratliff and Fieldner 274

G

Gage, Ellison, Zero point. Bacharach.... *246

GAS AND GASES:
——Continuous testing for acid or alkali. King. (S) 645
——Flue. Automatic sampler..... *294
——Furnace. Dry cleaning. Barrett..... *359
——Liquefaction of. Claude system..... *112
—— Linde system..... *112
—— Jeffries-Norton system *112
——Masks. Industrial 188
——Masks. Limitations for industrial use 220
—— Use in SO_2 industries. Fieldner and Kats. *582
——Natural. Helium from..... 107
——Producers. Slagging 192
——Refractive indices. Table of..... 292
——Reversing valve..... 435
——Roaster. Sulphur from. Foster. (P.) 545
——Sulphur dioxide determination. (S) 541
Gas warfare, see chemical warfare.
German metal combination 314
German requisitions in Poland..... 265
Germany. Scarcity of raw materials. (S.) 541

GLASS:
——American scientific. Howe. (N.)... 504
——Celluloid-glass lenses. Rosenthal. (N.) 504
——Optical. Gases in. (N.)..... 182
—— Defects. (N.)..... 182
—— Improved process. Morey..... 511
—— Testing. (N.)..... 182
—— Manufacture. (N.)..... 182
——Industry. Future needs. Bleiniger. (N.) 504
Glass Pots. Manufacture of. (N.)..... 182
Glue, Liquid. Specifications..... 430
——Water-resistant 601

GOLD AND SILVER: (See also Silver).
——From manganese ores. Caron. (P.) 544
——Mobility in solid state. Keller. (N.) 212
——Precipitation without filtration. Lockwood. (P.) 544
——Production. 1918 188
——Refining. Wohlwill. Griswold. (N.). 382
Goldfield Consolidated Mines Co., Passing of 207

GOVERNMENT:
——Ammonium nitrate plant *320
——Ownership of water power. (N.)... 380
——Surplus supplies. Disposal of:
—— Policy 215, 236
—— Alcohol 505
—— Caustic soda 375
—— Copper 375, 505
—— Lead 464
—— Soda ash 375
—— Sodium nitrate 505
—— Spelter 424
—— Sulphur 505
Grain size. Effect on mechanical properties of metals. Jeffries. (N.).... 211
Grand Forks smelter, Correction..... 7
Graphite, Canadian 81
Graphite symposium. (N.)..... 180
Gravel roofs..... 484
Grog. Effect of size in fire clay bodies. (S.) 88
Gypsum. Influence on blast-furnace slag cement. Bereslavsky 25

H

Hadfield's manganese steel 618
Hardening machine. Jackman and Squire. (P) 647
Hardwood tar, Flotation oils from....341, 586
Health standards for foundries. Erskine. (N.) 213
Helium. Commercial production of. Cottrell *104
Helmet's, Alloy steels for. Coyle 618
Heroult, Pig iron, ferros and sponge iron at 613
Hird process for tar distillation..... 524
Hirsch, Aron, und Sohn, organization.... 315
Humidity control in large plant..... 403
Hydrocyanic acid, Manufacture of. Pelton and Schwartz 165

HYDROGEN:
——Preferential catalyses in purification of. Taylor. (N.)..... 393
——Recorder. Harger *191
——Silicol process *289

I

Idaho, University of, Research fellowships. 528
Illinois, University of, Research vacancies. 151
Import license, New general..... 424
Import license proposed 456
Import Restrictions, British.....189, 288, 600

IMPORT STATISTICS:
——Census of Chemical Imports.....38, 562
—— Comment by Bernhard C. Hesse.. 559
——Copper, Jan., 1919..... 334
—— Feb., 1919 492
—— Mar. 1919 593
—— April, 1919 617
——Glycerine, Dec., 1918 219
—— Jan., 1919 334
—— Feb., 1919 492
—— Mar., 1919 593
——Gold and silver, 1918 136
——Iridium, Dec., 1918 295
—— Feb., 1919 492
—— Mar., 1919 593
——Lead and ores, Dec., 1918..... 295
—— Jan., 1919 400
—— Feb., 1919 492
—— Mar., 1919 644
——Platinum, Dec., 1918 295
—— 1918 288
—— Feb., 1919 492
—— Mar., 1919 593
——Tin bars, blocks, pigs, etc., Dec., 1918 219
—— Jan., 1919 400
—— Feb., 1919 492
—— Mar., 1919 593
——Tungsten ores, Dec., 1918 295
—— Jan., 1919 400
—— Feb., 1919 455
—— Mar. 1919 644
——Zinc, Jan., 1919 400
—— Feb., 1919 492
—— Mar., 1919 593
—— Mar., 1919 644
Indentation of steel balls under pressure. (S.) 192
Indigo, Synthetic, French production..... 58
Indophenol, Manufacture at Kingsport.... 640
Industrial casualties, Salvaging. McMurtrie 415
Industrial gas masks 188
Industrial News
47, 95, 142, 199, 255, 303, 366, 446, 495, 550, 607, 654.
Industrial Notes
96, 143, 200, 256, 367, 447, 496, 551, 608, 655.
Industrial organization. Mental factors. Read. (N.)..... 210
Industrial relations. Wilson. (N.)..... 209
Industrial research in England..... 399
Industrial wastes, Reclaiming. Hall..... 327
Industry, democracy and education. Corless. (N.) 208
Industry, Mental tests in. Yerkes. (N.) 210
Industry, Use of cripples in. Munroe. (N.) 210
Inspiration Consolidated Coal Co., Report 616
Instituto Cientifico Industrial, Chile..... 205
Insulators, For Cottrell precipitator..... 62
Interallied Chemical Confederation 561
Interstitial space, Calculation of..... 230
Iodine from seaweed. Bredenburg. (P.). 487
Iron & Steel Market
43, 91, 138, 195, 250, 298, 362, 441, 490, 546, 602, 650.

IRON AND STEEL:
——General:
—— Corrosion of. See Corrosion; also Metal protection.
—— Enameled steel, Blistering of. (N.) 182
—— Iron for precipitating copper. Johnson. (P.) 596
—— Metallurgical Society 7
—— Rust-proofing. See Metal protection.
——Economics:
—— Commercial feasibility of electric smelting in British Columbia..... 630
—— Electric pig iron after war 178
—— Electrochemistry's role 414
—— Reclaiming steel works waste. Hall. 327
——Analysis and Physical Tests:
—— Aluminium in plain steel..... 588
—— Aluminium, Separation from zirconium 588
—— Chromium and vanadium 589
—— Determination of U, Zr, Cr, V and Al in steel. Johnson.....523, 588
—— Indentation of steel balls under pressure. (S.) 192
—— Nickel by modified cyanide method. Miller 613
—— Relation of hardness to tensile tests. (S.) 595
—— Silky structure on fracture 72, 309
—— Toughness, Static, dynamic and notch. Hoyt. (N.) 213
—— Uranium in chrome tungsten steel. 524
—— Uranium in plain steel 523
—— Vanadium and chromium 589
—— Zirconium, Separation from Al and Fe 588
——Heat Treatment:
—— Fundamental principles. Hayward. 519
—— Heating prior to quenching. Giolitti. (P.) 544
—— Heat-treating shells. Hall. (S.). 193
—— Criticism 374
—— Helmets 618
—— Locomotive crane parts. (S.)..... 433
—— Malleableizing cast iron. (P.)..... 487
—— Physical tests on heat treated steel. 521
—— Pyrometric control 521
—— Quenching practice 520
—— Shirmer case-hardening process. Richards. (N.) 213
—— Temperature observations on large steel forging. Knight and Hansen 590
——Metallography:
—— Divorce of pearlite after cold working. (S.) 192
—— Flakes in alloy steel..... *216
—— Flakes in steel. Styri *343, 478
—— Correction *453
—— Criticism. Feild 556
—— Reply. Styri 557
—— Flaky and woody steel. Giolitti.. *271
—— Grain boundaries in alloy steels. Archer. (N.) 213
—— Motion microphotographs..... *509
—— Recrystallization of steel..... *279
——Properties and Specifications:
—— Brittleness due to pickling..... 535
—— Locomotive crane parts. (S.)..... 433
—— Relation of hardness to tensile tests 595
—— Resistance of steel to fatigue, Effect of cold-working on. (N.)..... 215
—— Rupture of cast iron in contact with mixed acid. (S.)..... 433
—— Specific density of steel, Effect of forging on. Doerr. (N.)..... 213
——Electric Furnace:
—— Castings, Electric *190
—— Nickel-manganese armor steel, Manufacture of 618
—— Pig and sponge iron at Heroult..... 613
—— Pig iron. British Columbia....206, 630
—— Pig iron. Turnbull 178
—— Power costs 73
—— Swedish practice 631
——Iron Manufacture:
—— Electric pig iron, British Columbia 206, 630
—— Electric pig iron. Turnbull..... 178
—— Malleableizing cast iron. (P.)..... 487
—— Pig iron at Heroult..... 613
——Steel Manufacture:
—— Alloy steel, High grade. Howe. (N.) 214
—— Armor, Nickel-manganese 618
—— Flaky and woody steel. Giolitti... *271
—— High speed steel substitutes. (P.).. 248
—— Manganese steel. Nichols. (P.)... 296
—— Nicu steel 88
—— Wheels, Davton one-piece *190
Italian import restrictions 437

J

Japan, Industrial notes..... 518
——Trade expansion during war..... 319
Johns Hopkins scholarship 564
Johnson, Joseph Esrey, Jr. An appreciation 376
Jones spur gear speed reducer *648
Joplin Zinc Situation 6

K

Kelp industry, Collapse of 206
Kennecott, Alaska. Ammonia leaching at. 328
Kerogens in oil-bearing shales..... 29
Kilns, Cement, at Kingsport..... 569
——Lime, Continuous gas-fired. Mount.. *428
——Tunnel, Types of. Harrop. (N.)... 39
Kingsport, Chemical industries at....*565, *639
Krell CO_2 recorder *291

L

Lactonic acids from wood pulp waste... 543
Launders, Formulas for... 230
Leaching, Results at New Cornelia Copper Co. (N.)... 212

LEAD:
——Arsenate, Lytle. (P.)... 487
——Burning at large acid plant... 410
——Coated iron sheet, Baskerville. (N.) 394
——Flotation of oxidized ores, Allen... 169
——Pigment, Production in U. S... 38
——Plating, Reeve. (N.)... 388
——Plating, Pitting during, Watts (N.). 384
——Poisoning... 477
——Red lead, Analysis of... 35, 260
——Red lead, Production in U. S... 38
——Reinforced, Baskerville. (N.)... 394
——Sulphidizing ore, Allen... 169
——White lead, Production in U. S... 38
Leather belting specifications. (S.)... 543
Legislation, Water power, Deadlock... 151
Lenses, Celluloid-glass, Rosenthal. (N.).. 504
Lenses, Resolving powers, Table of... 510
Library service in industrial laboratories. (N.)... 394
Lignin, From wood pulp waste... 543
Lime kiln, Continuous gas-fired, Mount.. *428
Linde helium plant at Fort Worth... *110
Linseed production in Argentina... 220
Liquefaction of gases, See gases, liquefaction of.
Liquid air plant at Muscle Shoals... *12
Literature, Chemical, Art of searching, Hibbert... 581
Litharge, Production in U. S... 38
Lubricating oils from coal... 78

M

Magnesite, Artificial. (P.)... 248
——Furnace linings. (P.)... 248
Magnesium, Metallic, Seward. (P.)... 87
Magnesium oxide from dolomite. (P.)... 248
Magnetic concentration, Pyrrhotite, Bonardi... 266

MANGANESE:
——Alloys, Use in open-hearth, Hoyt (N.) 215
——Bronze, Manufacture, McKinney. (N.)... 212
——Canadian deposits. (N.)... 263
——Dioxide depolarizers. (P.)... 432
——Ore, Concentrating, Newton. (N.)... 211
——Ores, Domestic production... 581
——Ores, Gold and silver recovery, Caron. (P.)... 544
——Steel, Nichols. (P.)... 206
—— Hadfield's... 618
Manufacturers' Catalogs 48, 144, 200, 256, 304, 368, 448, 552, 608, 656.
Manufacturers' rights, Gudeman. (N.).. 117
Markets, Non-Ferrous, Iron and Steel and Chemical 42, 91, 137, 194, 250, 298, 362, 441, 489, 545, 602, 649.
Masks, Gas, For industrial use... 188
——Limitations for industrial use... 220
——Use in SO_2 industries, Fieldner and Katz... *582
Mason work at large acid plant... 411
Matagorda sulphur deposits... *186
Matte, Nickel-copper, Refining, Sanger. (P.)... 296
Medicinal compounds, Synthetic, Stieglitz. (N.)... 115
Meetings and Events, Coming 143, 200, 256, 304, 367, 447, 496, 551, 608, 655.
Melting points of chemical elements... 351
Mental tests in industry, Yerkes. (N.).. 210
Merck & Co., Stock to be sold... 456

MERCURY:
——Fulminate, Proposed substitutes... 454
——Minor European deposits, Sterner-Rainer... 82
——Poisoning by... 83
——Price control of Spanish... 32
——Losses, in Spanish furnaces... 34
——Production at Almaden, Spain, Sterner-Rainer... *32
——Production costs... 454
——Production statistics, Spain... 35
Mesothorium as radium substitute... 168
Metal industry, Report of Alien Property Custodian... 313
Metall Gesellschaft, Organization... 314

METAL PROTECTION:
——General:
—— Preparation of surfaces for coating 535
—— Rust-proofing iron and steel, Rawdon, Grossman and Finn... 458, *530
Bibliography... 591
—— Salt spray test for coatings... 462
—— Testing various coatings... 461
——Coatings:
—— Aluminium... 459
—— Blue oxide... 460
—— Brass... 460
—— Copper... 460
—— Microstructure of... *536
—— Copper coatings on steel, Silverman. (N.)... 211
—— Lead... 459
—— Nickel and cobalt... 460
—— Oil coating, Jensen. (P.)... 487
—— Tin... 459
—— Zinc... 459
—— Microstructure of... *530

METAL PROTECTION—*Continued:*
——Processes:
—— Bower-Barffing... 460
—— Calorizing... 459
—— Carbonia process... 460
—— Coslett process... 461
—— Electroplating... 459
—— Epicassit... 459
—— Etching... 460
—— Galvanizing... 458
—— Parker process... 461
—— Schoop spraying process... 459
—— Sherardizing... 459

METALS:
——Brittle, Briquetting, Vogel. (P)... 647
——Colloid-chemical nature, Alexander. (N.)... 212
——Decomposition of, Krynitzky.. *277, *421
—— Correction... 501
——Mechanical properties, Effect of temperature, deformation and grain size on, Jeffries. (N.)... 211
——Volatile, Refining, Huldt. (P.)... 487
Mexican claims, Standard forms for... 453
Mexico, Protection of American rights in. 270
Micrometer, With pressure attachment... 434
Microscope, Application to ore dressing.. 232
Milling calculations, Lewis... 224
Mills, Ball, Fine crushing in, Davis. (N.). 210
——Tube, Calculating tonnage of... 227
Mineral production, British Columbia, 1918 148
——California, 1918... 149
Minerals Relief Commission... 454
Minerals Separation vs. Butte & Superior. 318
Mining industry, Co-operation, Parmelee. (N.)... 263
Molasses, Potash from fermentation liquors *55
Molybdenum, Canadian practice, Lamble. (N.)... 262
——Electrometallurgy of, Escard. (S).. 645
Monochlorbenzol, Manufacture at Kingsport... 640
Mono recorder, CO, and CO... *245
Morterud process of pulp cooking. (N.). 184
Munitions, Disposition of by War Dept... 76
Muscle Shoals Nitrate Plant, Fairlie ... *8
Mustard gas symposium. (N.)... 393

N

National Advisory Research Council, Canadian. (N.)... 263
National Foreign Trade Council, Convention... 136
National Industrial Conference Board, Prize essay contest... 219
National Research Council, Report of Patent Committee... 150
National Research Fellowships... 400
National Service Committee... 114
Navy Explosives Plant, Sale... 233
Nevada, Mining schools in... 148
New Caledonia, Electrometallurgy of nickel ores, Sabathier... 646
New Cornelia Copper Co., Leaching at. (N.)... 212
——Report... 615

NEW JERSEY CHEMICAL SOCIETY:
——December meeting... 39
——January meeting... 100
——April meeting, Program... 334
——Spring meeting, Program... 456
—— Report... 562
New Jersey Clay Workers' Association, New Brunswick meeting... 30
New Jersey Manufacturers' Council Meeting... 40
New York, American Electrochemical Society meeting... 379
——American Institute of Mining Engineers, Meeting... *208
——American Welding Society meeting.. 400
——Society of Chemical Industry, April meeting... 457
Nichols joints, Zinc... 341
Nickel, Copper matte, Refining, Sanger. (P.)... 296
—— Haylund. (P.)... 597
——Electrolytic refining, Guess. (N.).. 383
—— Haylund. (P.)... 597
——Electrometallurgy in New Caledonia, Sabathier... 646
——Sudbury ores. (S.)... 88
Nickle tangential Dutch oven... 65
Nicu steel. (S.)... 88
Nipissing Mines Co., Ltd., Report... 616

NITRIC ACID:
——Concentration of, Zeisberg. (P.)... 296
——French production... 57, 542
——From ammonia, Landis. (P.)... 431
——From ammonia, Muscle Shoals... 15
——Plant at Kingsport... 640
——Plant at Nitro, Hollister... *406
——Production, 1918... 168
Nitro, W. Va., Acid plant, Hollister... *406
Nitro-aromatics in explosives industry... 311
Nitrobenzol, Manufacture at Kingsport.. 639
Nitro-cellulose, Solvent recovery, Nash. (P.)... 296
Nitrogen from liquid air, Muscle Shoals. 12
Nitrogen fixation, Government plant at Muscle Shoals... *8
——Nitrogen from air, Tommasi. (P.).. 431
——Patents... 431
——Present status of, White. (N.)..115, 117
——Schoenherr furnace, Buffer for La Cour. (P.)... 596
Nitrosophenol, Manufacture at Kingsport 639
Nodulizing flotation concentrates in rotary kiln, Draper... 621
Non-Ferrous Metal Market 42, 91, 137, 194, 250, 298, 362, 441, 489, 545, 602, 649.
Norton helium plant at Petrolia... *110
Norway, Water-power resources. (S.)... 542
Notch toughness, Hoyt. (N.)... 213

O

Ohio Copper Mill... 6
Oil, Flotation, From crude tar... 341
——Lubricating, From coal... 79
Oil shales, Present status of... *28, 204
Open Price Associations... 121
Ordnance Department, Sale of scrap..101, 191
Oregon, Chromite deposits in... 79

ORES:
——Chloridizing complex... 207
——Chromite, Concentration of... 80
——Chromium in California... 319
——Copper, Ammonia leaching, Eddy .. 328
——Copper, Oxidized, in Arizona... 559
——Manganese, Concentrating, Newton. (N.)... 211
——Manganese, Domestic production... 581
——Manganese, Gold and silver recovery, Caron. (P.)... 544
——Manganese in California... 319
——Mercury, Sorting and sampling... 33
——Nickel, Electrometallurgy in New Caledonia, Sabathier... 646
——Pyrrhotite, Magnetic concentration .. 266
——Sintering, Richards. (P.)... 297
——Sulphur, Novel treatment, Thomas. 261
——Zinc, Electrolytic refining, Gillies. (P.)... 544
Organic chemistry, Industrial, Future of, Hibbert... 335
Overheated bearings, Detecting... 577
Oxidation and reduction, Little. (N) .. 562
Oxygen as a revolutionizer. (S.)... 541
Oxygen breathing apparatus... 221
Oxygen, Possibility of cheap production.. 106

P

Pan-American Commercial Conference.... 375

PAPER:
——Industry, Vocational education in .. 185
——Manufacture at Kingsport... 643
——Mills, Tannin from waste bark... 319
—— Treatment of waste liquors. (S.).. 542
——Paraffined, Recovering waste... 483
——Waterproof reinforced... 90
Paraffin wax, Purifying. (S.)... 434
Patent Committee, Report of... 150
Patents, Commercial development of Government employees'... 105
Patents, Recent Chemical and Metallurgical 86, 248, 296, 431, 487, 544, 596, 647.
Pearlite, Effect of cold working on. (S.).. 192
Penn-Wyoming Copper Co. sold... 148
Perchloric acid, For cement analysis... 452
Perkin medal, Award... *102
Perkin medalists, Classification... 205
Permeability of concrete tanks... 234
Perryville, Ammonium nitrate plant at.. *320
Personnel, Classification of, Exhibit... 319
Petroleum, Asphaltic base acid sludge, Utilization of, Baskerville. (N.) .. 394
——Products from coal... 7
Phelps-Dodge Corporation, Report... 616
Phenol, French production... 58
——Manufacture, Peterkin. (N.)... 394
Phosphorus, Determination of, in copper alloys... 58
Photography in research, Eldredge *506
——Johnson... *612
Phthalic anhydride, New process... 378
Picric acid plant sold... 540
Pigment, Zinc, Refining, Wemple. (P.).. 296
Pine-resins, Distillation of, Dunwoody. (P.)... 297
Pipe bending machine, Portable... *600
Pittsburgh, American Ceramic Society meeting... 180
——Electric power developments at... 31

PLATINUM:
——Black sands contain little... 101
——Canadian deposits. (N.)... 263
——Economy in industrial laboratories, Mueser... 69
——Substitute, Belais. (P.)... 487
Poisoning, Lead... 477
——Mercury... 83
Poland, German requisitions in... 265
Polytechnic Institute of Brooklyn, Dinner. 505
Porcelain, Dielectric failure of. (N.)... 183
——Physical properties. (N.)... 183
——Pots, Casting of. (N.)... 182
Postal zones and rates... 564

POTASH:
——Blast-furnace, A criticism... 308
—— Reply... 373
——Caustic, Manufacture of stick... 148
——Determination in cement by perchloric acid... 452
——From cement kiln dust, Anderson. (P.)... 544
——From iron blast-furnace gases. (P.) 432
——From molasses fermentation liquors, Humboldt... *55
——From silicates, Sterling. (P.)... 86
——From wood-ashes... 484
——Industry, Future of... 310
——Kelp industry, Collapse of... 206
——Salts, Separation of, Bassett... 76
Potassium hydroxide, Manufacture of pure... 148
Potassium sulphate from alunite, Chappell. (P.)... 249
Powdered coal, See coal, Powdered.
Power data for electrolytic zinc, Supplement to Feb. 15.

Power, Electric, Production by states 617
Power, Resources, Survey of 151
Precipitators, Electrical. E. E. Thum... *59
Price Associations 121
Producer, Gas, Slagging. (S.)..... 192
Pro patria, pro meter, pro liter..... 31
Publications, New
96, 144, 200, 448, 496, 552, 656.
Pulp, Formulas for water and solid in... 228
Pump selection. Everett 246
Pump, Valveless 599
Pyrometer for brass and bronze 436
Pyrometer tubes, Defects in. (N.)..... 183
Pyrometry symposium, Program 455
Pyroxylin compounds. Lindsay. (P.)..... 296
Pyrrhotite, Magnetic concentration. Bonardi 266
——Smelting copper-nickel. Johnson. (P.) 86

Q

Quicksilver (see mercury).

R

Railroad research work 558
Rails. Transverse fissure investigation. Comstock. (N.) 214
——Zinc for bonding 341
Ramsay Memorial Fund in America..... 64
Raymond, Dr. Rossiter W., Obituary.... *54
Reagent, Reducing. Bradley. (P.) 86
Recent Chemical and Metallurgical Patents
86, 248, 296, 431, 487, 544, 596, 647.

RECORDERS:

——Carbon Dioxide:
—— Types, uses of, etc. Kershaw.. *176, *241, *291
—— Arndt *291
—— Auto *243
—— Bi-meter *243
—— Cambridge bi-meter *243
—— Haber-Loewe *292
—— Krell *291
—— Mono *245
—— Sarco *241
—— Simmance-Abady *243
—— Telezometer *291
—— Thermoscope *291
—— Uehling *242
—— Webster, W. R., Combustion indicator *245
——Miscellaneous:
—— Hydrogen mono *191
Rectifiers, Mechanical, For Cottrell process 61
Red Cross Institute for Crippled and Disabled Men 416
Red lead, Analysis of. Edwards..... 35, 240
——Production of in U. S..... 38
Reducing reagent. Bradley. (P.)..... 86
Refractometer, Haber-Loewe *292
Refractories, Basic, Open hearth. (N.).. 213
——Magnesian. (P.) 248
Refractory materials, Influence of temperature on slag action. Howe..... 167
Reinforced concrete tanks. Frerichs.... 234
Research Corporation, Object of 105
Research Fellowships, National 400
——University of Idaho 528
Research, Industrial, in England 399
Research, Photography in. Eldredge *506
—— Johnson *612
Research, Steel, Laboratory 615
Research vacancies, Univ. of Ill. 151
Resiliometer 434
Resins, Crude pine, Distillation of. Dunwoody. (P.) 297
Respirators, Limitations of 220
Roofing, Bituminous. Wilson 425, 484

RUBBER:

——Accelerators, Organic vs. inorganic.. 417
——Substitutes. Dannerth. (N.) 100
——Tires, Solid. King *352
——Vulcanized, Effect of accelerators on properties. Kratz and Flower... 417
——Vulcanization, Effect of accelerators. Kratz. (N.) 100
Russia, Copper smelter equipment. Carlyle. (N.) 263
Rust-proofing. See metal protection.

S

Sagger mixtures. Brown. (N.) 39
Saggers, Improved. Tone. (P.) 597
Salvaging industrial casualties. McMurtrie 415
Sampler, Continuous, For sulphuric acid.. 38
——Flue gas, Automatic *294
Sandstone, Asphaltic, Extraction of kerogens from 31
Sarco CO_2 recorder *241
Schoellkopf plant, A. C. S. visit..... 395
Scholarships, Chemists' Club 620
——Johns Hopkins 564
Schools, Mining, Nevada 148
Screening efficiency, Calculation of 227
Sea water, Corrosion of brass in. Bruhl.. 239
Seaweed, Iodine from. Bredenburg. (P.) 487
Sewage, Cost of sterilization by chlorine.. 414
Sewer pipe, Manufacture at Kingsport... 568
Shales, Oil-bearing, Distillation of *30
——Present status of *28, 204
Sheffield, Ala., Nitrate plant at..... *8
Shells, Heat-treating. Hall. (S.)..... 193
—— Criticism 374
——Lead plating. Reeve. (N.) 388
Shirmer case-hardening process, Richards. (N.) 213
Silicates, Potash from, Sterling. (P.).. 86
Silicol process, Hydrogen *289
Silicon alloys, Hydrogen from..... *289
Silicon chloride, Smoke screens. Richter. (N.) 386
Silicomanganese. Klugh. (N.)..... 388
Silver, Production, 1918 188
——Refining, Moebius. Griswold. (N.).. 382
——Removal of export restrictions 528
Silver chloride, Colloidal, Wood 260
Simmance-Abady CO_2 recorder *243
Sintering ores. Richards. (P.) 297
Sintering zinc residues. Stock *525
Slag, Action upon refractories. Howe... 167
——Analyses of typical 167
——Blast-furnace, Cement from..... 25
——High-phosphorus, Walker. (P) 647
——Inclusions as cause of flakes. Styri *343, 478
—— Correction *453
Slagging gas producer. (S.)..... 192
Sluices, Formulas for 230
Smelting copper-nickel pyrrhotite. Johnson. (P.) 86
Smoke dissipation, High stacks for..... 311
Smoke screens. Hutchins. (N.)..... 386
Society of Chemical Industry, New York meeting, April 457
Soda liquors, Treatment of. (S.)..... 542
Sodium chloride, Effect on blue-powder formation. Dean 628
Sodium cyanide, Separation from hydroxide. Metzger. (P.) 431
Sodium nitrate, Disposal of by Gov't..... 236
Sodium permanganate, Electrolytic. (N.). 387
Sodium silicate, silicol process *289

SPECIFICATIONS:

——Acetic anhydride 540
——Acetone, Commercial 540
——Ammonium chloride 540
——Bituminous roofing materials 486
——Carbon tetrachloride 540
——Glue, Liquid 430
——Leather belting. (S.)..... 543
——Locomotive crane parts. (S.)..... 433
——Napthalene 540
——Potassium permanganate, Commercial 540
——Rubber tires, Solid..... 358
——Sodium cyanide 540
——Steel for machine parts..... 519
——Tannic acid, Commercial 540
——Zinc coatings on iron..... 484
Specific heat, Silicates and platinum. (S.) 434
Speed reducer, Spur gear *648
Stacks, High, For smoke dissipation..... 311
Standard temperatures 351
Steam, Exhaust, at high back pressures. Field 18
Steel, see also Iron and steel.
——Flaky and woody. Giolitti..... *271
——Helmets and armor. Coyle..... 618
——Research laboratory 615
——Wheels, Dayton one-piece..... *190
Stocks and Bonds
200, 256, 304, 368, 448, 496, 552, 608, 656.
Storage tanks, Concrete. Frerichs..... 234
Sugar, Beet, Production in Utah and Idaho 560
Sulphidizing process 169
Sulphidizing by roasting. Dwight. (P.).. 297
Sulphidizing lead ores. Allen..... 169
Sulphite liquors, Treatment of. (S.)..... 542
Sulphonic acids, Aromatic. (P.)..... 596
——New process 282
—— Patent 596
Sulphur, Burner, Downdraft, McIntyre, (P.) 647
——French patents, Court decision. Mock and Blum 637
——From roaster gases. Foster. (P.) 545
——New mine in Texas..... *186
——Ore, Novel treatment. Thomas..... 261
Sulphur dioxide, Army gas masks for use with. Fieldner and Katz..... *582
——Determination. (S.)..... 541
——Physiological effects 582
——Production. McIntyre. (P) 647
Sulphur dyes, Manufacture at Kingsport.. 639

SULPHURIC ACID:

——Continuous sampler for..... 38
——French production 57, 542
——Fuming, Action on cast iron. (S.).. 433
——Plant at Nitro, Hollister..... *406
Surface combustion, Roasting by, McCourt. (P.) 297
Sweden, Exchange of scholarships with.. 505
Synopsis of Recent Chemical and Metallurgical Literature
88, 135, 192, 433, 541, 594, 645.

T

Tanks, Reinforced concrete, Frerichs..... 234
Tannery at Kingsport 641
Tannin, From waste paper-mill bark..... 319
Tanning extract plant at Kingsport..... 641
Tar, Continuous distillation of 524
Tar, Hardwood, Flotation oils from.. 341, 586
Technical Association of Pulp and Paper Industry, New York Meeting..... *184
——Spring meeting, Erie, Announcement. 505
Telezometer *291
Temperature, Effect on mechanical properties of metals, Jeffries. (N.)..... 211
——Influence of, on slag action on refractories. Howe 167
——Observations on heating of large steel forging. Knight and Hansen..... 590
——Standards 351
——Uniformity, Electric furnace. Ferguson 283
Texas Gulf Sulphur Co. *186
Text-books, Common errors in chemical. Smith. (N.) 39
Thermoscope, For CO_2..... *291
Thorium compounds. Clarke. (P.)..... 487
TIN:
——Allotropic modifications *277
——Effect of decomposition of aluminium alloys 423
——Import restrictions removed 638
——Situation, Summary of 221
Tires, Solid Rubber. King..... *352
Toluol, French production 57
Tools, Davidson casting process. Johnson. (N.) 213
Tomboy Gold Mines Co., Report..... 149
Trade, Foreign, Aids to..... 189
Trade resumption with Europe..... 389
Trailer, Trackless 437
Trinitrotoluol, Use for surplus..... 455
Tubes, Corrosion of condenser. (S.)..... 594
Tungsten in England. (S.)..... 595
——Oxide, Reduction of. Orance. (P.) 597
Tunnel kiln, Types of. (N.)..... 39

U

Uehling gas composimeter..... *242

UNITED STATES:

——Ammonium nitrate plant..... *320
——Employment service, Work of..... 270
——Nitrate Plant No. 1..... 8
——Nitrate Plant No. 2, Fairlie..... *8
——Gold production, 1918..... 188
——Lead pigment production in..... 38
——Manganese ore production..... 581
——Silver production, 1918..... 188
——Tariff Commission, Proposed dyestuffs amendments 70, 116
University of Idaho, Research fellowships 528
University of Illinois, Research vacancies. 151
Uranium from pitchblende, Carbide method. (N.) 382
U. S. Smelting, Refining and Mining Co., Report 616

V

Vacuum drum drier..... *642
Valve, Gas reversing 435
Vanadinite, Vanadium and lead from. Conley. 514
Vanadium, From cuprodescloizite, Conley 465
——From vanadinite, Conley 514
——Methods of extraction..... 466
Vancouver, Mining conference 454
Vogelstein, L., & Co. Organization..... 315

W

War minerals, Commission to settle losses on 327
War-time trip to Europe. Parmelee..... *124
War Trade Board Rulings
100, 154, 188, 189, 319, 389, 424, 638.
Waste, Principles of. Steinmetz. (N.)... 184
Waste liquors from paper mills, Treatment. (S.) 542
Waste, Steel works and industrial. Hall.. 327
Water glass, see sodium silicate.
Water power, Bill, Fate of..... 265
——Government ownership. (N.)..... 380
——Legislation 151
——Legislation needed 415
——Resources in Norway. (S.)..... 542
Waterproofing, Aëroplane propellors 175
——Concrete 223
Waterproof paper 90
Water-resistant glues 601
Wax, Paraffine, Purification of..... 434
Webb Law 120
Webster W. R. combustion indicator..... *245
Welder, Portable electric arc..... 436
Western Chemical and Metallurgical Field
6, 55, 148, 206, 375, 454, 559, 613.
Wheels, Steel, One-piece..... *190
White lead, Production in U. S..... 38
Women, Susceptibility to lead poisoning.. 477
Wood, Acetic acid from..... 185
——Acetone from, Bassett 190
——Alcohol from 185
Wooden boxes, Metal strapping on..... 483

Z

ZINC:

——Alloys with copper and aluminium, Guillet and Bernard 645
——Alloys with iron 530
——Coatings on iron and steel, Metallography 530
——Distillation, Berglund. (P.)..... 487
——Dust, Newell. (P.)..... 544
——Effect of sodium chloride on blue-powder formation, Dean 628
——Electrolytic, From acid chamber sludge, Broughton *155
——Electrolytic, Power Data, Clevenger and Mulock, Supplement to Feb. 15.
——Electrolytic refining, Gillies. (P.) 544
——Government spelter disposal..... 424
——Industry, Economics of, Choate..... 237
——Industry, Economics 260, 500
——Leaching, Sulman and Picard. (P) 647
——Pigment Refining, Wemple. (P.).. 296
——Price adjustment at Joplin..... 6
——Residues, Sintering, Stock..... *525
——Rail bonding 341
——Smelting, Sulphides pass directly to oxides 500
——Working conditions in gas belt smelters 375

AUTHORS' INDEX

ALLEN, GLENN L. Flotation of oxidized ores of lead 169

BACHARACH, HERMAN. Determining zero reading on an Ellison gage. 246
Baker, B. E. Large vs. small electric furnaces 374
Balcom, A. R. Ferromanganese 52
Barrett, J. C. Cleaning furnace gases without the use of water 359
Bassett, H. P. Acetone 190
———Separation of potash salts 76
Bereslavsky, Euphime. Influence of gypsum on the blast-furnace slags in the manufacture of cement .. 25
Blum, Asher and Hugo Mock. Decision on Frasch patents on sulphur mining 637
Bolling, J. Esten. Effecting and controlling crystallization of ammonium nitrate 401
Bonardi, J. P. Magnetic concentration of pyrrhotite ores 266
Booth, William Miller. A great opportunity for intelligent location of industries 311
Broughton, H. E. Electrolytic deposition of zinc 155
Bruhl, Paul T. Corrosion of brass in sea water 239

CHANDLER, C. F. Perkin Medal presentation address 102
Choate, Parker C. Economics of the zinc industry: A prophetic discussion 237
Clevenger, G. H. and F. S. Mulock. Power data for electrolytic zinc. (Supplement, Feb. 15, 1919.)
Coghill, Will H. Hand device for flotation experiments 537
Cohoe, Wallace P. Chemical specifications 539
Comstock, George F. An example of crystal crushing 309
Conley, J. E. A proposed metallurgical process for the treatment of vanadinite for the recovery of lead and vanadium 514
———Treatment of cuprodescloizite for extraction and recovery of vanadium, lead and copper 465
Corse, W. M. The aluminium bronze industry 163
Cottrell, Frederick G. Commercial production of helium 104
Coyle, John A. Alloy steels for helmets and armor 618
Croasdale, Stuart. High stacks for smoke dissipation 311

DEAN, REGINALD S. The Bradford process of preferential flotation. 372
———Effect of sodium chloride on blue-powder formation 628
Draper, Robert M. Nodulizing flotation concentrates in a rotary kiln with powdered coal 621
Driscoll, R. A. That missing page from the blue-back speller 53

EDDY, LAWRENCE. Practical considerations in ammonia leaching of copper-bearing ores 328
Edwards, W. F. The analysis of red lead 260
———Notes on the chemical analysis of red lead 35
Eldredge, Arthur G. Photography in research 506
Everett, B. N. Points in pump selection. 246

FAIRLIE, ANDREW M. Muscle Shoals nitrate plant 8
Feild, Alex. L. Flaky structures and their possible elimination 556
Ferguson, John B. Temperature uniformity in an electric furnace 283
Field, Crosby. Engineering research in chemical organizations 84
———Exhaust steam at high back pressures 18
Fieldner, A. C., W. A. Selvig and W. C. Ratliff. Fusibility of coal ash. 274
———and S. H. Katz. Use of army gas masks in atmospheres containing sulphur dioxide 582
———and W. A. Selvig. Fusibility of ash from Pennsylvania coals 629
Finn, A. N., Henry S. Rawdon and M. A. Grossman. Metallic coatings for rust-proofing iron and steel—I 458
II 530
III 591
Flower, A. H. and G. D. Kratz. Effect of certain accelerators upon the properties of vulcanized rubber. 417
Frerichs, F. W. Storage tanks made of reinforced concrete 234

GELLERT, N. H. Potash recovery 308
Gerner, George C. and Arthur Phillips. Notes on the influence of certain variables associated with the anneal of cold-worked alpha brass 622
Giolitti, Dr. Federico. Observations on flaky and woody steel 271
Grasty, J. S. Recovery of potash 373
Grigioni, J. L. Instituto Cientifico Industrial del Salitre de Chile 205
Grossman, M. A., Henry S. Rawdon and A. N. Finn. Metallic coatings for rust-proofing iron and steel—I 458
II 530
III 591
Grugan, Justice F. Chrome sands on the Pacific Coast 79

HALL, FRANCIS. Reclaiming steel works and industrial wastes 326
Hansen, F. F. and O. A. Knight. Temperature observations on heating, quenching and drawing of a large steel forging 590
Hawley, L. F. and O. C. Ralston. Flotation experiments on hardwood tar oils 586
Hayward, Carle R. Laboratory electrodeposition plant 240
Hayward, R. A. Fundamental principles to be considered in the heat treatment of steel 519
Hendrick, Ellwood. Chemical warfare—A new weapon 152
Hesse, Bernhard C. The American chemists' responsibility 559
Hibbert, Harold. The art of searching chemical literature 557, 578
———Future of industrial organic chemistry 335
Hobsbawn, J. Berkwood. Instituto Cientifico Industrial del Salitre de Chile 205
Hollister, H. E. and C. E. Erection of huge sulphuric, nitric, mixed acid and denitrating plant under war pressure 406
Howe, H. M. That missing page from the blue-back speller 501
Howe, Raymond M. Influence of temperature upon the action of slag upon refractory materials 167
Humboldt, E. Recovery of potash from molasses fermentation liquors .. 55

IONIDES, S. A. Continuous sulphuric acid sampler 38

JACKSON, LUIS. Railroad research work 558
Jacoby, Henry E. Centrifugal agitator and distributor 598
Johnson, Charles Morris. Determination of uranium, zirconium, chromium, vanadium and aluminium in steel—I 523
II 588
Johnson, E. M. Economics in the zinc industry 500
Johnson, Nathan C. Photography in research 612

KATZ, S. H. and A. C. FIELDNER. Use of army gas masks in atmospheres containing sulphur dioxide 582
Kershaw, John B. C. Fuel economy in the boiler house—I 176
II 241
III 291
King, Andrew H. Solid rubber tires 352
Knight, O. A. and F. F. Hansen. Temperature observations on heating, quenching and drawing of a large steel forging 590
Kratz, G. D. and A. H. Flower. Effect of certain accelerations upon the properties of vulcanized rubber. 417
Krynitzky, Col. A. I. Decomposition of metals — I 277
II 421
(Correction) 501

LANDIS, W. S. The oxidation of ammonia 470
Lewis, Robert S. Milling calculations .. 224
Lonergan, Jay. Eliminating phosphorus and sulphur in electric ferromanganese furnaces 245
Lovejoy, C. H. Improved form of granular carbon resistance furnace for fusion point of coal ash and firebrick 538

McMURTRIE, DOUGLAS C. Salvaging industrial casualties 415
Maoussa, Georges. Industrial efforts in France during the war 56
Mardick, J. R. Application of nitro-aromatic compounds in explosives industry 311
Merten, W. J. Heat treating of shells .. 374
Meyer, A. L. That missing page from the blue-back speller 612
Miller, L. F. Modification of the cyanide method for the estimation of nickel in steels 613
Mock, Hugo and Asher Blum. Decision on Frasch patents on sulphur mining 637
Morey, George W. An improved method of optical glass manufacture ... 511
Moses, Frederick G. Flotation for the practical mill man 571
Mount, W. D. Burning lime in a gas-fired continuous kiln 428
Mueser, E. C. Platinum economy in the industrial chemical laboratory .. 69
Mulock, F. S. and G. H. Clevenger. Power data for electrolytic zinc ..... (Supplement, Feb. 15, 1919.)

NEWBERRY, WILLIAM B. The perchloric acid method for potash in cement materials 452
Nickle, Frank H. Furnace settings for caustic pots 65, 261

OSSA, BELISARIO DIAZ. Instituto Cientifico Industrial del Salitre de Chile 205

PARMELEE, H. C. Notes on a war-time trip to Europe 124
Pearce, Jackson A. Colloids in flotation. 52
Pelton, H. A. and M. W. Schwarz. The manufacture of hydrocyanic acid 165
Petzold, Fred. Credit to whom credit is due 453
Phillips, Arthur and George C. Gerner. Notes on the influence of certain variables associated with the anneal of cold-worked alpha brass 622
Place, Richard G. Rapid electrolytic copper assay without rotating cathode 452

RALSTON, O. C. and L. F. HAWLEY. Flotation experiments on hardwood tar oils 586
Ratliff, W. C., W. A. Selvig and A. C. Fieldner. Fusibility of coal ash 274
Rawdon, Henry S., M. A. Grossman and A. N. Finn. Metallic coatings for rust-proofing iron and steel—I 458
II 530
III 591
Rollin, William H. Future of the barium industry 163

SCHWARZ, M. W. and H. A. PELTON. The manufacture of hydrocyanic acid 165
Selvig, W. A., W. C. Ratliff and A. C. Fieldner. Fusibility of coal ash 274
———and A. C. Fieldner. Fusibility of ash from Pennsylvania coals ... 629
Simpson, Louis. The present status of oil shales 204
Sosman, Robert B. Bucher cyanide process 559
Sterner-Rainer, Dr. Roland. Mercury production at Almaden, Spain 32
———Minor occurrences of mercury in Europe 82
Stock, K. Sintering zinc residues 525
Stoughton, Bradley. Joseph Esrey Johnson, Jr. 376
Stratton, S. W. Work of the Bureau of Standards on electroplating 501
Strong, R. K. Classifying the Perkin medalists 205
Styri, Haakon. Flakes in steel 453
———Flaky fractures and their possible elimination 478, 556
———Observations on so-called "Flakes" in steel 342

TAYLOR, L. R. Analysis of ferromanganese 53
Thomas, Kirby. Novel method for treating sulphur ore 261
Thompson, G. W. Our chemical industries made permanent 118
Thum, Ernest Edgar. Notes on electrical precipitators 50
Toch, Maximilian. Concrete as a chemical engineering material 222
Tone, F. J. Electrochemistry in its human relations 413
Turnbull, Robert. Electric pig iron after the war 178
Turrentine, J. W. Future of the potash industry 310

VOM BAUR, C. H. Vom Baur electric furnace 488

WILSON, GEORGE LANDIS. Bituminous roofing materials and construction — I 425
II 484
Wesson, David. Some wild engineering I have known 512
Wood, R. F. Colloidal condition of silver chloride 260